

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
20 September 2001 (20.09.2001)

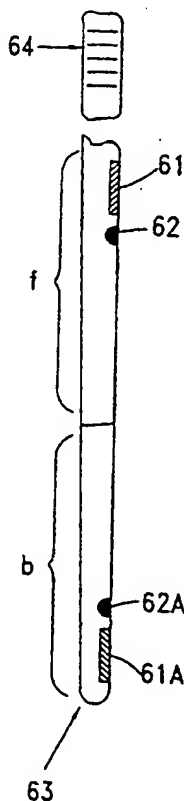
PCT

(10) International Publication Number
WO 01/67964 A3

- (51) International Patent Classification⁷: **A61B 17/068**,
17/128, 1/00
- (21) International Application Number: **PCT/IL01/00238**
- (22) International Filing Date: **12 March 2001 (12.03.2001)**
- (25) Filing Language: **English**
- (26) Publication Language: **English**
- (30) Priority Data:
135117 16 March 2000 (16.03.2000) **IL**
138632 21 September 2000 (21.09.2000) **IL**
139788 20 November 2000 (20.11.2000) **IL**
141665 26 February 2001 (26.02.2001) **IL**
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- (81) Designated States (national): **AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.**

[Continued on next page]

(54) Title: **FUNDOPLICATION APPARATUS AND METHOD**



(57) Abstract: An endoscopic device for the partial fundoplication for the treatment of GERD, comprises: a) a distal bending portion (b) and a flexible portion (f) suitable to be positioned in extended shape within the esophagus of a subject; b) a positioning assembly comprising two separate elements (62, 62A), one of which (62A) is located on said distal bending portion (b), and the other (62) on said flexible portion (f); c) a stapling assembly comprising a staple ejecting device (61A), wherein said staple ejecting device (61A) is located on either said bending portion (b) or on said flexible portion (f), said staple ejecting devices (61A) being in working positioned relationship when said two separate elements (62, 62A) of said positioning assembly are aligned; and d) circuitry for determining when said two separate elements (62, 62A) of said positioning assembly are aligned.

WO 01/67964 A3



(84) **Designated States (regional):** ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

(88) **Date of publication of the international search report:**
18 April 2002

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

INTERNATIONAL SEARCH REPORT

International Application No

P./IL 01/00238

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61B17/068 A61B17/128 A61B1/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 395 030 A (KURAMOTO ET AL.) 7 March 1995 (1995-03-07) cited in the application abstract; figures ---	1
A	EP 0 630 612 A (ETHICON INC.) 28 December 1994 (1994-12-28) abstract; figures column 1, line 55 -column 2, line 29 column 5, line 34 -column 6, line 10 ---	1
A	US 5 897 562 A (BOLANOS ET AL.) 27 April 1999 (1999-04-27) cited in the application abstract; figures ---	1
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☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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"G" document member of the same patent family

Date of the actual completion of the international search

2 October 2001

Date of mailing of the international search report

08.02.02

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INTERNATIONAL SEARCH REPORT

International Application No

PC, IL 01/00238

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 403 326 A (HARRISON ET AL.) 4 April 1995 (1995-04-04) cited in the application abstract; figures ---	1
A	US 5 197 649 A (BESSLER ET AL.) 30 March 1993 (1993-03-30) cited in the application figures ---	1
A	US 5 787 897 A (KIETURAKIS) 4 August 1998 (1998-08-04) cited in the application abstract; figures ---	1
P,A	WO 00 53102 A (GAZAYERLI) 14 September 2000 (2000-09-14) cited in the application the whole document ---	1,26-28, 30-44,47
A	US 5 772 099 A (GRAVENER) 30 June 1998 (1998-06-30) claim 1 ---	1,26,27, 29-31
A	US 5 676 674 A (BOLANOS ET AL.) 14 October 1997 (1997-10-14) cited in the application column 6, paragraph 4 ---	1,43
A	US 5 814 055 A (HUGHETT ET AL.) 29 September 1998 (1998-09-29) claim 1; figures 8,12-17 ---	27,32
A	US 5 833 616 A (BELL ET AL.) 10 November 1998 (1998-11-10) figures 1,4,6 ---	39
P,A	US 6 099 542 A (KIM ET AL.) 8 August 2000 (2000-08-08) claim 1 ---	41
A	US 5 727 553 A (SAAD) 17 March 1998 (1998-03-17) ---	
A	WO 91 00049 A (KARL STORZ GMBH & CO.) 10 January 1991 (1991-01-10) page 17, line 6 -page 23, line 14; figures 1-6C ---	48,49, 51,52
A	DE 42 41 938 A (KARL STORZ GMBH & CO.) 16 June 1994 (1994-06-16) column 7, line 41 -column 9, line 33; figures ---	48

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INTERNATIONAL SEARCH REPORT

International Application No

PL, IL 01/00238

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3 889 662 A (MITSUI KAZUHIKO) 17 June 1975 (1975-06-17) column 4, line 4-50 ---	48,53
A	WO 89 11252 A (UNIV CONNECTICUT) 30 November 1989 (1989-11-30) page 19, line 3 -page 24, line 11; figures 1,2,4,5 ---	48-50
A	US 5 776 049 A (TAKAHASHI SUSUMU) 7 July 1998 (1998-07-07) column 5, line 3 -column 7, line 16 column 9, line 19 -column 10, line 19; figures 2A,B,9A,B -----	48

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL 01/00238

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 20-25, 56, 62
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-19, 26-53, 63, 64

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-19,26-53,63,64

Endoscopic device comprising a bending portion and a positioning assembly.

2. Claims: 54,55

Endoscope having an illumination channel and at least one objective lens.

3. Claims: 57-61

Endoscope comprising a system for measuring the distance between two objects.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PC/L 01/00238

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5395030	A	07-03-1995	JP 6047050 A	22-02-1994
EP 0630612	A	28-12-1994	AU 669794 B2	20-06-1996
			AU 6331894 A	01-12-1994
			CA 2124109 A1	25-11-1994
			EP 0630612 A1	28-12-1994
			JP 7051273 A	28-02-1995
			US 5395033 A	07-03-1995
US 5897562	A	27-04-1999	US 5676674 A	14-10-1997
			US 5571116 A	05-11-1996
US 5403326	A	04-04-1995	NONE	
US 5197649	A	30-03-1993	AU 661053 B2	13-07-1995
			AU 2724592 A	06-05-1993
			AU 3424995 A	01-02-1996
			CA 2081239 A1	30-04-1993
			EP 0540010 A2	05-05-1993
			JP 5337122 A	21-12-1993
			US 5411508 A	02-05-1995
US 5787897	A	04-08-1998	US 5558665 A	24-09-1996
			US 6067990 A	30-05-2000
			WO 9600030 A1	04-01-1996
WO 0053102	A	14-09-2000	US 6159146 A	12-12-2000
			AU 3623300 A	28-09-2000
			WO 0053102 A1	14-09-2000
US 5772099	A	30-06-1998	NONE	
US 5676674	A	14-10-1997	US 5571116 A	05-11-1996
			US 5897562 A	27-04-1999
US 5814055	A	29-09-1998	US 5662667 A	02-09-1997
			AU 716012 B2	17-02-2000
			AU 3680897 A	19-03-1998
			CA 2215636 A1	12-03-1998
			EP 0829235 A1	18-03-1998
			JP 10113351 A	06-05-1998
			AU 705597 B2	27-05-1999
			AU 6565396 A	27-03-1997
			CA 2185759 A1	20-03-1997
			EP 0769273 A2	23-04-1997
			JP 9182757 A	15-07-1997
US 5833616	A	10-11-1998	AU 4159097 A	19-03-1998
			WO 9808429 A1	05-03-1998
			US 6236876 B1	22-05-2001
US 6099542	A	08-08-2000	US 5830224 A	03-11-1998
			AU 1969797 A	01-10-1997
			CA 2249237 A1	18-09-1997
			EP 0889705 A1	13-01-1999
			JP 11512640 T	02-11-1999
			WO 9733522 A1	18-09-1997

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PL./IL 01/00238

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5727553	A	17-03-1998	NONE	
WO 9100049	A	10-01-1991	DE 3921233 A1	14-02-1991
			AT 120628 T	15-04-1995
			WO 9100049 A1	10-01-1991
			DE 59008855 D1	11-05-1995
			EP 0434793 A1	03-07-1991
			JP 4500768 T	13-02-1992
			US 5166787 A	24-11-1992
DE 4241938	A	16-06-1994	DE 4241938 A1	16-06-1994
			WO 9413190 A1	23-06-1994
			US 2002007110 A1	17-01-2002
US 3889662	A	17-06-1975	DE 2425827 A1	19-12-1974
WO 8911252	A	30-11-1989	US 4938205 A	03-07-1990
			CA 1316252 A1	13-04-1993
			EP 0416025 A1	13-03-1991
			JP 4500321 T	23-01-1992
			WO 8911252 A1	30-11-1989
			US 5109276 A	28-04-1992
			US 5200838 A	06-04-1993
			US 5172685 A	22-12-1992
			US 5200819 A	06-04-1993
US 5776049	A	07-07-1998	JP 3220538 B2	22-10-2001
			JP 6194580 A	15-07-1994
			US 5522789 A	04-06-1996